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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GORDON COOK and GRAEME FOLLETT

Appeal 2009-002395
Application 10/523,023
Technology Center 3700

Decided: August 4, 2009

Before FRANCISCO C. PRATS, MELANIE L. MCCOLLUM, and JEFFREY N. FREDMAN, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to a device for impulse therapy. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

Statement of the Case

Background

The Specification teaches that "[t]he use of an inflatable garment applied to a limb or other area of the human body as a means of enhancing blood circulation is a well established medical technique with proven

clinical benefits" (Spec. 1, ll. 9-11). According to the Specification, one prior art garment "comprises an inflatable bladder being part of or integral with means in the form of a foot wrap for securing the bladder in the plantar arch of the foot and about the area to be treated" (Spec. 1, ll. 18-20).

The Claims

Claims 1-3, 5-7, and 9-11 are on appeal. We will focus on claims 1, 3, 5, and 6 which are representative and read as follows:

> 1. A device for use in applying impulse therapy to a limb of the human body comprising:
>
> an inflatable bladder having volume-reducing internal component means for dissipating the flow of fluid into the bladder with accompanying reduction in fluid flow rates and noise generated by the fluid flow during pressurization of the bladder in a timed sequence of pressure hold and pressure release;
>
> means for providing intermittent pulses of fluid to the bladder in accordance with the pre-determined timed sequence of pressure hold and pressure release; and
>
> means for securing the bladder around the limb of the human body to apply the bladder to the area to be treated.
>
> 3. The device as claimed in claim 1, wherein the internal component is a gel.
>
> 5. The device as claimed in claim 2, wherein the foam is attached to one or both walls of the bladder.
>
> 6. The device as claimed claim 5, wherein the foam is provided with air flow channels.

The prior art

The Examiner relies on the following prior art references to show unpatentability:

Gorran	US 4,135,500	Jan. 23, 1979
Grim	US 5,353,525	Oct. 11, 1994
Johnson, Jr.	US 5,496,262	Mar. 5, 1996

The issues

A. The Examiner rejected claims 1, 2, 7, 9, and 10 under 35 U.S.C. § 102(b) as being anticipated by Johnson (Ans. 3-4).

B. The Examiner rejected claims 3 and 11 under 35 U.S.C. § 103(a) as being obvious over Johnson and Gorran (Ans. 4).

C. The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being obvious over Johnson (Ans. 4-5).

D. The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being obvious over Johnson and Grim (Ans. 5).

A. 35 U.S.C. § 102(b) over Johnson

The Examiner rejected claims 1, 2, 7, 9, and 10 under 35 U.S.C. § 102(b) as being anticipated by Johnson (Ans. 3-4).

The Examiner finds that "Johnson '262 discloses in figures 1-6 a device for use in applying impulse therapy to a limb of the human body comprising an inflatable bladder 6, means (1, la), for providing intermittent pulse of fluid to the bladder, means 3, for securing the bladder around the limb" (Ans. 3). The Examiner finds that "the bladder includes a volume-reducing internal component 34, that is a foam material (urethane)" (Ans. 3).

Appellants contend that "[t]here is no explicit disclosure in . . . Johnson '262 . . . of an inflatable bladder having a volume-reducing internal

component means for dissipating the flow of fluid into the bladder with accompanying reduction in fluid flow rates and noise" (App. Br. 6). Appellants also contend that "[t]he Office Action clearly provides no objective factual evidence that the layers 32 of urethane foam in Johnson '262 necessarily constitute volume-reducing internal component means for dissipating the flow of fluid into the bladder with accompanying reduction in fluid flow rates and noise" (App. Br. 7).

In view of these conflicting positions, we frame the anticipation issue before us as follows:

Have Appellants demonstrated that the Examiner erred in finding that Johnson teaches "an inflatable bladder having volume-reducing internal component means" as required by claim 1?

Findings of Fact (FF)

1. The Specification teaches that "the bladder 4 is provided with an internal media 10 in the form preferably of a foam, gel or fluid reservoir which reduces the internal volume of the bladder" (Spec. 6, ll. 22-24).

2. The Specification teaches that "[t]he internal media acts to dissipate the flow of fluid within the bladder thus reducing noise and also the amount of fluid necessary to achieve the required rate of pressurisation" (Spec. 7, ll. 4-6).

3. The Specification teaches that "[d]uring use the bladder is filled with a fluid such as air" (Spec. 1, l. 22).

4. Johnson teaches "a therapeutic intermittent compression system comprising an inflatable chamber for pressure engagement with at least a portion of an associated body" (Johnson, col. 4, ll. 20-24).

5. Johnson teaches that the "leg brace 3 . . . has the inflatable chambers in air cell 6 on the medial side and a sealed air cell 6*b* on the lateral side" (Johnson, col. 5, ll. 19-21).

6. Johnson teaches that air cell 6 "includes a first sealed chamber 8 enclosed in a second larger chamber 9 . . . chamber 9 may be preinflated or adjustably inflated via valve 9*a*" (Johnson, col. 5, ll. 36-44).

7. Johnson teaches the device in figure 3, reproduced below:

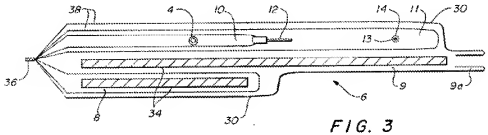

FIG. 3

"FIG. 3 is a cross-sectional view of the air cell" (Johnson, col. 4, l. 56).

8. Johnson teaches that "[i]n the cross section of FIG. 3, it can be seen that the outer chamber 9 is formed with an outer layer 30 that is preferably of 0.012 inches pvc film. The sealed chamber 8 enclosed within chamber 9 has a urethane foam layer 34 therein. Another layer of urethane foam is placed in chamber 9 between the chamber 8 and the chamber 11" (Johnson, col. 5, ll. 54-59).

9. Johnson teaches that "[t]wo additional chambers 10 and 11, shown . . . in cross section in FIG 3, are enveloped by and included within chamber 9 . . . . Chamber 10 is enclosed within chamber 11 and is inflated by air pump 1. . . . A restrictor tube 12 is sealed within chamber 10 and communicates with chamber 11" (Johnson, col. 5, ll. 41-50).

10. Johnson teaches that "[a]ir pump 1 is turned on by timer 1*a* for approximately 30 seconds of each minute. Air flows through tube 2 to chamber 10 which quickly inflates" (Johnson, col. 6, ll. 1-3).

11. Johnson teaches "a cuff-like member adapted to be applied to the limb of a user" (Johnson, col. 8, ll. 7-8).

Principles of Law

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. In construing a means-plus-function claim limitation in accordance with 35 U.S.C. § 112, ¶ 6, one first identifies the function of the limitation and then looks to the Specification and identifies the corresponding structure for that function. *Med. Instrumentation and Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003).

"Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an [A]pplicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product." *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977). "Whether the rejection is based on 'inherency' under 35 U.S.C. § 102, on 'prima facie obviousness' under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to

manufacture products or to obtain and compare prior art products." *Id.* at 1255.

Analysis

We agree with the Examiner that Johnson teaches a device comprising the three elements required by claim 1, an inflatable bladder having a volume-reducing internal component, a "means for providing intermittent pulses of fluid to the bladder" and "a means for securing the bladder around the limb of the human body" (*see* Ans. 3-4; FF 4-11).

What Appellants dispute is whether Johnson teaches the inflatable bladder having a volume-reducing internal component for "dissipating the flow of fluid into the bladder" (*see* App. Br. 6).

Johnson teaches an air cell 6 or bladder which comprises four separate inflatable compartments, chambers 8, 9, 10, and 11 (FF 5-9). Johnson teaches that two of these compartments, chambers 8 and 9, comprise polyurethane foam (FF 8). Consistent with the Specification, foam can function as a "volume-reducing internal component" (FF 1). The Specification recognizes air as a "fluid" (FF 3).

Consequently, when Johnson teaches that air pump 1 functions to flow air into the four compartment air cell 6, particularly into chamber 10 of air cell 6, the Examiner reasonably finds that "it is inherent that the foam material (34) is a volume-reducing internal component (located inside the bladder 6 and taking up space therein) and the foam is a means for dissipating the flow of fluid into the bladder" (Ans. 5-6).

We agree with the Examiner that as the air flows into chamber 10 of bladder 6, it is reasonable to conclude that the urethane foam layers in

chambers 8 and 9 will inherently function to "dissipate the flow of fluid" by resisting the flow and that the foam layer will also function to "reduce noise" (FF 5-11). Appellants have provided no evidence to prove that the prior art bladder of Johnson does not necessarily or inherently possess the characteristics of the claimed product.

We are not persuaded by Appellants argument that the "Office Action clearly provides no objective factual evidence that layers 32 of urethane foam in Johnson '262 necessarily constitute volume-reducing internal component means" (App. Br. 7). Appellants misplace the burden in this argument. The Examiner has demonstrated that Johnson teaches an inflatable bladder which satisfies all of the structural elements of claim 1 (*see* Ans. 5). In particular, the bladder has the urethane foam volume-reducing internal component (FF 8-9). Consequently, under *Best*, the burden of proving that the bladder of Johnson does not inherently satisfy the claim is placed on Appellants.

We do not find Appellants' citation of the Examiner's alleged "admission" persuasive (App. Br. 7), since the Examiner is simply noting that Johnson is relied upon inherently because Johnson provides no express teaching that the urethane foam functions to dissipate fluid flow and reduce noise (*see* Final Rej. 4-5).

We are also not persuaded by Appellants argument that "the inclusion of foam material in Johnson '262 is never mentioned as being operatively coupled to Johnson's '262 pulsed pressure chambers 10 and 11" (App. Br. 9). In fact, bladder 6 comprises four chambers, and chambers 8 and 9 (which comprise urethane foam) are disclosed as being adjacent to chambers

10 and 11 and are physically coupled to chambers 10 and 11 (*see* Johnson, Fig. 3; FF 7). While no air flows from chambers 10 and 11 into chambers 8 or 9, these two chambers form part of Johnson's bladder 6 as discussed above (FF 5-9).

Conclusion of Law

Appellants have not demonstrated that the Examiner erred in finding that Johnson teaches "an inflatable bladder having volume-reducing internal component means" as required by claim 1.

B. 35 U.S.C. § 103(a) over Johnson and Gorran

The Examiner rejected claims 3 and 11 under 35 U.S.C. § 103(a) as being obvious over Johnson and Gorran (Ans. 4).

The Examiner finds that "Johnson doesn't disclose the internal component being a gel. Gorran teaches in figure 1 an inflatable device comprising an internal component that is a gel (col. 3, lines 15-20), used to inflate a bladder" (Ans. 4). The Examiner finds that "the gel as taught by Gorran could be substituted for the internal component disclosed by Johnson because either internal component could be used to reduce volume in the inflatable device" (Ans. 4).

Appellants contend that "Johnson '262 and Gorran are quite different and are not concerned with solving the same problem" (App. Br. 13). Appellants also contend that "the Office Action fails to provide objective factual evidence that replacing urethane foam layers 34 by a gel inside of the Johnson '262 cuff will achieve the patient cushioning and compression provided by a urethane foam layer" (App. Br. 14).

In view of these conflicting positions, we frame the obviousness issue before us as follows:

Have Appellants demonstrated that the Examiner erred in finding that it would have been obvious to replace the urethane foam layer of Johnson with a gel as taught by Gorran?

Findings of Fact

11. Gorran teaches a floatation support system which comprises a fluid where "said fluid preferably comprises a liquid such as water, but other liquids including materials of greater or lesser viscosity than water may be utilized . . . and similarly other flowable and semi-flowable materials, including gels . . . can be used for filling the interior of envelope" (Gorran, col. 3, ll. 10-19).

Principles of Law

"[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418-19 (2007). It is important for the Examiner to identify a reason that would have prompted one of ordinary skill in the art to combine the elements to arrive at the claimed subject matter. *Id.* ("[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.") "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.* at 417-18, *quoting In re Kahn*, 441 F.3d 977, 988 (Fed.

Cir. 2006). The Examiner has the initial burden of establishing a prima facie case obviousness under 35 U.S.C. § 103. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992) ("[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.").

Analysis

We agree with Appellants that "Johnson '262 and Gorran are quite different and are not concerned with solving the same problem" (App. Br. 13). While the Examiner is correct that both the gel and the urethane foam are found in the prior art, the Examiner has not articulated specific reasons why the ordinary practitioner would have recognized that a gel used in flotation systems is equivalent to a foam used in inflatable cuffs.

The Examiner contends that the "gel and the foam are equivalent because both can be used to reduce the internal volume, dissipate the flow of fluid and reduce noise during pressurization" (Ans. 7). However, these reasons are solely derived from Appellants invention and not based on the disclosures of either Johnson or Gorran. Neither Gorran nor Johnson teach the urethane foam for any of the purposes identified by the Examiner. The Examiner provides no other reason or evidence as to why these references should be combined.

Conclusion of Law

Appellants have demonstrated that the Examiner erred in finding that it would have been obvious to replace the urethane foam layer of Johnson with a gel as taught by Gorran.

C. 35 U.S.C. § 103(a) over Johnson

The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being obvious over Johnson (Ans. 4-5).

Appellants contend that [a]ll that is stated is that sealed chamber 8 of Figure 3 enclosed within chamber 9 has a layer of urethane foam 34 therein, and that another layer of urethane foam is placed in chamber 9 between the chamber 8 and the chamber 11. So, Johnson '262 clearly does not disclose a layer of foam attached to a bladder wall, as claimed" (App. Br. 17).

In view of these conflicting positions, we frame the obviousness issue before us as follows:

Have Appellants demonstrated that the Examiner erred in finding it obvious to attach foam to a wall of the bladder?

Principles of Law

"The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR* at 416. "If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability." *Id.* at 417. Moreover, an "[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious." *In re Fout*, 675 F.2d 297, 301 (CCPA 1982). As noted by the Court in *KSR*, "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." 550 U.S. at 421.

Analysis

Appellants contend that "Johnson '262 clearly does not disclose a layer of foam attached to a bladder wall, as claimed" (App. Br. 17). However, the issue is whether an ordinary practitioner, taught by Johnson to

incorporate urethane foam into the bladder, would have found it obvious to attach that urethane foam to a wall of the bladder.

We agree with the Examiner's conclusion that it would have been obvious to attach foam to "one or both walls of the bladder" since one mode of formation is where the foam is integral to the device (Ans. 5). Appellants have not identified any unexpected result or secondary consideration which would suggest that attaching the foam in an "integral" fashion would be unobvious. Such a combination is merely a "predictable use of prior art elements according to their established functions." *KSR*, 550 U.S. at 417.

Conclusion of Law

Appellants have not demonstrated that the Examiner erred in finding it obvious to attach foam to a wall of the bladder?

D. 35 U.S.C. § 103(a) over Johnson and Grim

The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being obvious over Johnson and Grim (Ans. 5).

The Examiner finds that "Grim teaches in figure 7 foam 72, having channels (col. 4, lines 60-65)" (Ans. 5). The Examiner finds that "[i]t would have been obvious to one having ordinary skill in the art at the time that the invention was made that the foam disclosed by Johnson could be fabricated with channels as taught by Grim in order to allow air to flow along the channels inside of the inflatable bladder" (Ans. 5).

Appellants contend that "the Office Action fails to provide any objective factual evidence that one of ordinary skill in the art would be properly motivated to turn to Grim to modify the only identified single one

of two references on which this rejection is based, because Johnson '262 and Grim are so different" (App. Br. 18). "Appellants respectfully submit that one of ordinary skill in the art would have no incentive to include a foam material, grooved or not, in Johnson's '262 intermittently pulsed bladders because Johnson '262 clearly does not disclose such a feature" (App. Br. 19).

In view of these conflicting positions, we frame the obviousness issue before us as follows:

Have Appellants demonstrated that the Examiner erred in finding it obvious to use the grooved foam material of Grim in the bladder of Johnson?

Findings of Fact

12. Grim teaches a shoe with a "resilient spring member 26 expands the chamber 20, drawing air in through valve 16" (Grim, col. 3, ll. 61-62).

13. Grim teaches that spring 26 can be "replaced by the resilient material 72, which may be a relatively stiff, open cell foam material, which serves substantially the same function as the spring 26" (Grim, col. 4, ll. 59-62).

14. Grim teaches that the "open cell foam material 72 may have channels extending through it to facilitate air flow from the valve 16' to the valve 18'" (Grim, col. 4, ll. 63-65).

Analysis

We agree with Appellants that "Johnson '262 and Grim are so different (a rapidly constantly inflated and deflated therapeutic cuff and an infrequently inflatable shoe) and are not concerned with solving the same problem " (App. Br. 18). While Grim does teach channels extending

through the foam to facilitate air flow, there is no specific reason to incorporate such channels into the foam of Johnson. In Johnson, the foam is in chambers which are not subject to routine deflation, but are inflated orally and then left sealed. There is no indication in Johnson that chambers 8 and 9 are ever deflated. In Grim, the foam requires channels to permit deflation. The Examiner has not articulated specific reasons why the ordinary practitioner would have recognized that channels used in deflation would be necessary in the foam of Johnson, in chambers which are not deflated.

Conclusion of Law

Appellants have demonstrated that the Examiner erred in finding it obvious to use the grooved foam material of Grim in the bladder of Johnson.

SUMMARY

In summary, we affirm the rejection of claim 1 under 35 U.S.C. § 102(b) as anticipated by Johnson. Pursuant to 37 C.F.R. § 41.37(c)(1)(vii)(2006), we also affirm the rejection of claims 2, 7, 9, and 10 as these claims were not argued separately.

We reverse the rejection of claims 3 and 11 under 35 U.S.C. § 103(a) as obvious over Johnson and Gorran.

We affirm the rejection of claim 5 under 35 U.S.C. § 103(a) as obvious over Johnson.

We reverse the rejection of claim 6 under 35 U.S.C. § 103(a) as obvious over Johnson and Grim.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv)(2006).

AFFIRMED-IN-PART

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